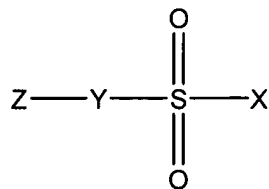


In the claims

1. **(currently amended)** A system adapted for use in a health-related environment comprising:

a biofilm resistant surface comprising a coating comprising an effective amount of bioavailable anti-fouling compound represented by general structure 1:



1

wherein

X represents -OH, F, Cl, or Br;

Y represents O, S, or Se;

Z represents optionally substituted ~~alkyl, cycloalkyl,~~ aryl, or $-(\text{CH}_2)_m-\text{R}_{80}$,

wherein when Z is substituted, a substituent is selected independently for each occurrence from the group consisting of halo, azido, alkyl, aralkyl, alkynyl, cycloalkyl, hydroxyl, alkoxy, amino, nitro, sulfhydryl, imino, amido, silyl, alkylthio, sulfonyl, sulfonamido, formyl, heterocyclyl, aryl, heteroaryl, trifluoromethyl, and cyano;

R_{80} represents ~~independently for each occurrence aryl, cycloalkyl, cycloalkenyl, heterocyclyl, or polycyclyl;~~ and

m is an integer in the range 0 to 8 inclusive, and

wherein the compound is releasable from the ~~surface~~ coating and wherein the coating is an aqueous, vinyl, acrylic, resin, epoxy, phenolic, adhesive, elastomeric, wax, polyester, polyamide, chlorinated rubber, acrylate, polyurethane, latex, fluoropolymer, or silicone coating.

2. **(canceled)**

3. **(canceled)**
4. **(canceled)**
5. **(previously presented)** The system of claim 1 wherein Z represents alkylphenyl, arylphenyl, or heteroarylphenyl.
6. **(currently amended)** The system of claim 1, wherein Z represents ~~methyl, octyl, 4-~~(2-methylpropyl)phenyl, 4-(1,1-dimethylethyl)phenyl, 4-(1,1-dimethylpropyl)phenyl, 4-pentylphenyl, 4-(1-methyl-1-phenylethyl)phenyl, or 4-(1-methylheptyl)phenyl.
7. **(canceled)**
8. **(canceled)**
9. **(original)** The system of claim 1 wherein X represents -OH or Cl; and Y represents O.
10. **(currently amended)** The system of claim 1, wherein X represents -OH, F, Cl, or Br; and ~~Z represents optionally substituted alkyl, aryl, or $(CH_2)_m-R_{80}$.~~
11. **(currently amended)** The system of claim 1, wherein X represents -OH or Cl; and ~~Z represents optionally substituted alkyl, aryl, or $(CH_2)_m-R_{80}$.~~
12. **(previously presented)** The system of claim 1, wherein X represents -OH, F, Cl, or Br; and Z represents alkylphenyl, arylphenyl, or heteroarylphenyl.
13. **(previously presented)** The system of claim 1, wherein X represents -OH or Cl; and Z represents alkylphenyl, arylphenyl, or heteroarylphenyl.
14. **(currently amended)** The system of claim 1, wherein X represents -OH, F, Cl, or Br; and Z represents ~~methyl, octyl, 4-~~(2-methylpropyl)phenyl, 4-(1,1-dimethylethyl)phenyl, 4-(1,1-dimethylpropyl)phenyl, 4-pentylphenyl, 4-(1-methyl-1-phenylethyl)phenyl, or 4-(1-methylheptyl)phenyl.
15. **(currently amended)** The system of claim 1, wherein X represents -OH or Cl; and Z represents ~~methyl, octyl, 4-~~(2-methylpropyl)phenyl, 4-(1,1-

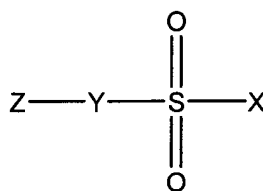
dimethylethyl)phenyl, 4-(1,1-dimethylpropyl)phenyl, 4-pentylphenyl, 4-(1-methyl-1-phenylethyl)phenyl, or 4-(1-methylheptyl)phenyl.

16. **(currently amended)** The system of claim 1, wherein Y represents O; ~~and Z represents optionally substituted alkyl, aryl, or $(CH_2)_m-R_{80}$.~~
17. **(previously presented)** The system of claim 1, wherein Y represents O; and Z represents alkylphenyl, arylphenyl, or heteroarylphenyl.
18. **(currently amended)** The system of claim 1, wherein Y represents O; and Z represents ~~methyl, octyl~~, 4-(2-methylpropyl)phenyl, 4-(1,1-dimethylethyl)phenyl, 4-(1,1-dimethylpropyl)phenyl, 4-pentylphenyl, 4-(1-methyl-1-phenylethyl)phenyl, or 4-(1-methylheptyl)phenyl.
19. **(currently amended)** The system of claim 1, wherein X represents -OH, F, Cl, or Br; Y represents O; ~~and Z represents optionally substituted alkyl, aryl, or $(CH_2)_m-R_{80}$.~~
20. **(currently amended)** The system of claim 1, wherein X represents -OH or Cl; Y represents O; ~~and Z represents optionally substituted alkyl, aryl, or $(CH_2)_m-R_{80}$.~~
21. **(previously presented)** The system of claim 1, wherein X represents -OH, F, Cl, or Br; Y represents O; and Z represents alkylphenyl, arylphenyl, or heteroarylphenyl.
22. **(previously presented)** The system of claim 1, wherein X represents -OH or Cl; Y represents O; and Z represents alkylphenyl, arylphenyl, or heteroarylphenyl.
23. **(currently amended)** The system of claim 1, wherein X represents -OH, F, Cl, or Br; Y represents O; and Z represents ~~methyl, octyl~~, 4-(2-methylpropyl)phenyl, 4-(1,1-dimethylethyl)phenyl, 4-(1,1-dimethylpropyl)phenyl, 4-pentylphenyl, 4-(1-methyl-1-phenylethyl)phenyl, or 4-(1-methylheptyl)phenyl.
24. **(currently amended)** The system of claim 1, wherein X represents -OH or Cl; Y represents O; and Z represents ~~methyl, octyl~~, 4-(2-methylpropyl)phenyl, 4-

(1,1-dimethylethyl)phenyl, 4-(1,1-dimethylpropyl)phenyl, 4-pentylphenyl, 4-(1-methyl-1-phenylethyl)phenyl, or 4-(1-methylheptyl)phenyl.

25. **(canceled)**
26. **(currently amended)** The system of claim 1 ~~25~~, wherein the coating is applied to a medical device.
27. **(withdrawn)** The system of claim 26 ~~25~~, wherein the coating is applied to an implant.
28. **(withdrawn)** The system of claim 26 ~~25~~, wherein the coating is applied to a graft.
29. **(previously presented)** The system of claim 1, wherein the effective amount decreases the amount of plant pathogens attached to a plant or plant component by a factor of 4 relative to a control that does not comprise the compound.
30. **(currently amended)** The system of claim 1, wherein the bioavailable antifouling compound is released from the ~~biofilm-resistant surface~~ coating at a rate ranging from about 1 to about 200 $\mu\text{gcm}^2\text{d}^{-1}$.
31. **(canceled)**
32. **(currently amended)** The system of claim 1, wherein the bioavailable antifouling compound is released from the ~~biofilm-resistant surface~~ coating as a sustained release.
33. **(currently amended)** The system of claim 1, wherein the bioavailable antifouling compound is released from the ~~biofilm-resistant surface~~ coating at a preselected rate.
34. **(withdrawn)** The system of claim 1, wherein the coating ~~biofilm-resistant surface~~ is applied to an exterior surface of a living organism.
35. **(withdrawn)** The system of claim 34, wherein the coating ~~bioavailable antifouling compound~~ is ~~carried in a vehicle~~ adapted for application to the exterior surface of the living organism.

36. **(withdrawn)** The system of claim 35, wherein the coating is in the form ~~vehicle~~ is ~~selected from the group consisting of~~ liquids, gels, powders, ointments, salves, creams, pastes or ~~and~~ paints.
37. **(withdrawn)** The system of claim 1, wherein the coating ~~bioavailable antifouling compound~~ is applied to an epidermal surface of a human being.
38. **(original)** The system of claim 1, wherein the bioavailable antifouling compound is released by a material incorporated as part of a medical device and wherein the biofilm-resistant surface is a surface of the medical device.
39. **(currently amended)** A coating comprising an effective amount of a bioavailable anti-fouling compound represented by general structure 1:



1

wherein

X represents -OH, F, Cl, or Br;

Y represents O, S, or Se;

Z represents optionally substituted ~~branched alkyl or unbranched C₂-C₇ alkyl, cycloalkyl, aryl, or -(CH₂)_m-R₈₀~~, wherein when Z is substituted, a substituent is selected independently for each occurrence from the group consisting of halo, azido, alkyl, aralkyl, alkynyl, cycloalkyl, alkoxy, nitro, imino, amido, silyl, alkylthio, sulfonyl, sulfonamido, formyl, heterocyclyl, aryl, heteroaryl, and trifluoromethyl;

R₈₀ represents ~~independently for each occurrence aryl, cycloalkyl, cycloalkenyl, heterocyclyl, or polycyclyl~~; and

m is an integer in the range 0 to 8 inclusive,

wherein when the coating is applied to a surface of an article the coating releases the compound, thereby impairing biofilm formation on the surface, and wherein the coating is an aqueous, vinyl, acrylic, resin, epoxy, phenolic, adhesive, elastomeric, wax, polyester, polyamide, chlorinated rubber, acrylate, polyurethane, latex, fluoropolymer, or silicone coating.

40. (canceled)

41. (canceled)

42. (canceled)

43. (previously presented) The coating of claim 39, wherein Z represents alkylphenyl, arylphenyl, or heteroarylphenyl.

44. (previously presented) The coating of claim 39, wherein Z represents 4-(2-methylpropyl)phenyl, 4-(1,1-dimethylethyl)phenyl, 4-(1,1-dimethylpropyl)phenyl, 4-pentylphenyl, 4-(1-methyl-1-phenylethyl)phenyl, or 4-(1-methylheptyl)phenyl.

45. (canceled)

46. (canceled)

47. (original) The coating of claim 39, wherein X represents -OH or Cl; and Y represents O.

48. (currently amended) The coating of claim 39, wherein X represents -OH, F, Cl, or Br; and Z represents ~~optionally substituted branched alkyl or unbranched C₂-C₇ alkyl, aryl, or (CH₂)_m-R₈₀.~~

49. (currently amended) The coating of claim 39, wherein X represents -OH or Cl; ~~and Z represents optionally substituted branched alkyl or unbranched C₂-C₇ alkyl, aryl, or (CH₂)_m-R₈₀.~~

50. (previously presented) The coating of claim 39, wherein X represents -OH, F, Cl, or Br; and Z represents alkylphenyl, arylphenyl, or heteroarylphenyl.

51. **(currently amended)** The coating of claim 39, wherein X represents -OH or Cl; and Z represents alkylphenyl, ~~heteroalkylphenyl~~, arylphenyl, or heteroarylphenyl.
52. **(previously presented)** The coating of claim 39, wherein X represents -OH, F, Cl, or Br; and Z represents 4-(2-methylpropyl)phenyl, 4-(1,1-dimethylethyl)phenyl, 4-(1,1-dimethylpropyl)phenyl, 4-pentylphenyl, 4-(1-methyl-1-phenylethyl)phenyl, or 4-(1-methylheptyl)phenyl.
53. **(previously presented)** The coating of claim 39, wherein X represents -OH or Cl; and Z represents 4-(2-methylpropyl)phenyl, 4-(1,1-dimethylethyl)phenyl, 4-(1,1-dimethylpropyl)phenyl, 4-pentylphenyl, 4-(1-methyl-1-phenylethyl)phenyl, or 4-(1-methylheptyl)phenyl.
54. **(currently amended)** The coating of claim 39, wherein Y represents O; ~~and Z represents optionally substituted branched alkyl or unbranched C₂-C₇ alkyl, aryl, or (CH₂)_m-R₈₀.~~
55. **(currently amended)** The coating of claim 39, wherein Y represents O; and Z represents alkylphenyl, ~~heteroalkylphenyl~~, arylphenyl, or heteroarylphenyl.
56. **(previously presented)** The coating of claim 39, wherein Y represents O; and Z represents 4-(2-methylpropyl)phenyl, 4-(1,1-dimethylethyl)phenyl, 4-(1,1-dimethylpropyl)phenyl, 4-pentylphenyl, 4-(1-methyl-1-phenylethyl)phenyl, or 4-(1-methylheptyl)phenyl.
57. **(currently amended)** The coating of claim 39, wherein X represents -OH, F, Cl, or Br; Y represents O; ~~and Z represents optionally substituted branched alkyl or unbranched C₂-C₇ alkyl, aryl, or (CH₂)_m-R₈₀.~~
58. **(currently amended)** The coating of claim 39, wherein X represents -OH or Cl; Y represents O; ~~and Z represents optionally substituted branched alkyl or unbranched C₂-C₇ alkyl, aryl, or (CH₂)_m-R₈₀.~~
59. **(previously presented)** The coating of claim 39, wherein X represents -OH, F, Cl, or Br; Y represents O; and Z represents alkylphenyl, arylphenyl, or heteroarylphenyl.

60. **(previously presented)** The coating of claim 39, wherein X represents -OH or Cl; Y represents O; and Z represents alkylphenyl, arylphenyl, or heteroarylphenyl.
61. **(previously presented)** The coating of claim 39, wherein X represents -OH, F, Cl, or Br; Y represents O; and Z represents 4-(2-methylpropyl)phenyl, 4-(1,1-dimethylethyl)phenyl, 4-(1,1-dimethylpropyl)phenyl, 4-pentylphenyl, 4-(1-methyl-1-phenylethyl)phenyl, or 4-(1-methylheptyl)phenyl.
62. **(previously presented)** The coating of claim 39, wherein X represents -OH or Cl; Y represents O; and Z represents 4-(2-methylpropyl)phenyl, 4-(1,1-dimethylethyl)phenyl, 4-(1,1-dimethylpropyl)phenyl, 4-pentylphenyl, 4-(1-methyl-1-phenylethyl)phenyl, or 4-(1-methylheptyl)phenyl.
63. **(previously presented)** The coating of claim 39, wherein the coating is temporary.
64. **(canceled)**
65. **(canceled)**
66. **(original)** The coating of claim 39, wherein the release rate of the compound from the surface is in the range of about 1 to about 200 $\mu\text{gcm}^2\text{d}^{-1}$.
67. **(canceled)**
68. **(original)** The coating of claim 39, wherein the release of the compound is a sustained release.
69. **(canceled)**
70. **(currently amended)** The coating of claim 39, wherein the coating is formulated as a composition selected from the group consisting of ~~gas, vapor, aerosol~~, paste, gel, liquid, wax, caulk, adhesive, ~~polymerizable compositions~~ and paint.
71. **(original)** The coating of claim 39, wherein the article can be implanted in a living body.
72. **(original)** The coating of claim 39, wherein the article can be inserted in a living body.

73. **(original)** The coating of claim 39, wherein the article can be applied to a living body.

74. **(original)** The coating of claim 39, wherein the coating is employed as an agent selected from the group consisting of glue, cement and adhesive.

Claims 75-88 **(canceled)**

89. **(previously presented)** The coating of claim 39, wherein the article is selected from the group consisting of grafts, implants and medical devices.

90. **(canceled)**

91. **(canceled)**